The Secretary feels that this result can be quickly attained by the sympathetic efforts of the members to extend information of the society and its *Transactions* among their friends. The Secretary cannot do this. The individual member can.

MIMICKING THE AMEBOID AND STREAMING MOTIONS OF PROTOPLASM

Robertson (Science Oct. 4, 1912) reports a method of mimicking the motions of protoplasm in the Ameba which he claims is very striking and instructive.

1. *Ameboid Motions.* Prepare a 10% solution of camphorgum in benzol. Color this deeply by the addition of Sudan III or Scharlach R. Place a drop of this mixture upon the surface of water. Thru the alterations of surface tension, lengthy and irregular "pseudopodia" are rapidly thrown out and withdrawn.

2. *Streaming Motion.* Add to portions of the solution described above olive oil or other viscous liquid, and place drops of the mixture on water as before. By increasing the amount of the oil the alterations of form are less and less rapid; but the internal streaming is energetic and striking.

RELATIONS OF BLOOD TO SIZE IN RABBITS

Boycott (Jour. Path. and Bact., April, 1912) summarizes the results of studies on the relation of the size of rabbits to growth and quality of blood therein, as follows:

1. Small rabbits are found to have a larger percent of haemoglobin, and more blood and haemoglobin in proportion to body weight, than large rabbits.

2. Male rabbits appear to have more haemoglobin per unit of blood than the female.

3. After the suckling period, rabbits have at least haemoglobin relatively to the body weight when it weighs 1.5 to 2 kilos.

4. A rabbit of 2 kilos has about 6.5 c.c. oxygen capacity and about 45 c.c. of blood per kilo of body weight.

CULTURE OF MALARIAL PLASMODIA

Bass and Johns (Jour. Exp. Med. Oct. 1912) report the results of successful cultures of malarial plasmodia *in vitro*. This relates to the asexual cycle, tho the authors found suggestions of the sexual.

The asexual cycle of *Plasmodium vivax* and *P. falciparum* were grown in vitro in human blood and in red blood cells in Locke's solution. There is evidence that the parasites cannot grow outside the red blood cells. Leucocytes devour the malarial plasmodia grown *in vitro* only when the parasites escape from red cells. By removing leucocytes, successive generations of both species may be had by adding fresh red cells and serum at proper intervals. The generation period varies greatly with temperature and probably with other conditions.

PURE CULTURES OF SPIROCHAETA IN VITRO

Noguchi (Jour. Exp. Med. Aug. 1912) describes the pure cultivation of several species of Spérochaeta and *Treponema pallida* in vitro. The conditions are: a temperature of about 37°C.; fresh sterile tissue, and a body fluid capable of forming a loose fibrin with the tissue; and some oxygen.

The germs do not lose wholly their pathogenic quality by such cultivation, tho the virulence seems diminished.

Both longitudinal and transverse division of these organisms is affirmed by the writer.

NOTES ON POLLEN

Lord Avebury gives (Jour. R. M. S., Oct. 1912) in popular form many facts relating to pollen,—its structure, development, variations in size, form and surface, colors, etc. He includes a table giving length of the pollen grain and length of pistil. He concludes that there is a distinct relation between these, especially convincing when nearly related species are compared. The article concludes with a summary of the family traits of the pollen of the various natural orders of plants.

ROOT NODULES IN PLANTS OTHER THAN THE LEGUMINOSÆ

Since the discovery that atmospheric nitrogen is assimilated by leguminous plants thru the action of symbiotic bacteria in the nodules of the roots, it has been an open question as to how widely this relationship and this power extend in the plant kingdom. In the investigation of this question it has been found that root nodules exist in Cycadaceæ, Elæaginaceæ, in *Alnus*, *Podocarpus*, and *Myrica*.